Shattuck Superfund Site

Summer 2004 Update

July 2004

Colorado Department of Public Health and Environment

The S.W. Shattuck Chemical Company Superfund site (Shattuck) is located at 1805 S. Bannock Street in Denver, Colorado (see **Figure 1**).

Figure 1. Site Location Map

SITE OPERATIONS

With the successful move of the Mining Structure to Setup 5, monolith demolition is again underway. Heavy equipment (two excavators with hydraulic hammers, an excavator with a digging bucket, and a front end loader) breaks up the monolith and loads the conveyor belt that carries the waste material to the Loadout Structure (see **Figure 2**).

Figure 2. Monolith Demolition using Two Excavators with Hydraulic Breakers (Mining Structure).

During the week of April 19, 2004, Shaw, the site contractor, tested a larger excavator with a larger hammer than the current heavy equipment used for monolith demolition to determine its effectiveness and productivity (see **Figure 3**). After reviewing the results, it was determined that the larger excavator with hammer was more suited for the site operations than the existing mining equipment. Therefore, Shaw replaced the two excavators with hydraulic breakers with two new larger excavators with larger hammers.

Figure 3. New Mining Equipment - Larger Excavator with Hammer.

Loadout operations continue to fill up to five rail cars a day with up to 108 tons of waste material in each rail car. The railroad pulls out up to 20 rail cars a week from the Shattuck rail spur. As of July 14, 2004, site operations have removed 53 percent of the waste from Shattuck in 1061 rail cars.

MILESTONES

Two project milestones of 1,000 rail cars shipped off-site and 100,000 man-hours without a lost time incident were achieved at the end of June 2004. The project commemorated this occasion by holding an event at the Shattuck site for the different agencies and companies that contributed to reaching these milestones successfully.

After monolith removal, the Pre-verification Program began on underlying soil. The Pre-verification Program includes excavation of some soil below the monolith in order to achieve remedial action objectives and soil sampling based on a row/column grid system (see **Figure 4**). The sampling covered 100 percent of the mined area, which included sampling at the bottom of these excavated areas. Pre-verification soil sampling results, when compared to the 2000 Record of Decision (ROD) Amendment, resulted in the Corps of Engineers' approval on May 22, 2004, to relocate the Mining Structure to Setup 5.

Figure 4. Underlying Soil Excavation and Stockpiling of Material.

MINING STRUCTURE RELOCATION

Geosynthetic material covered the monolith's exposed working face from May 20 to May 28, 2004 during the underlying soil excavation and Mining Structure relocation process. Applicable health and safety and radiological monitoring continued during both relocations. Following engineering preparations, Shaw successfully moved the five modules of the Mining Structure approximately 75 feet north to the fifth setup position on May 23, 2004 (see **Figure 5**).

Figure 5. Mining Structure Relocation Process.

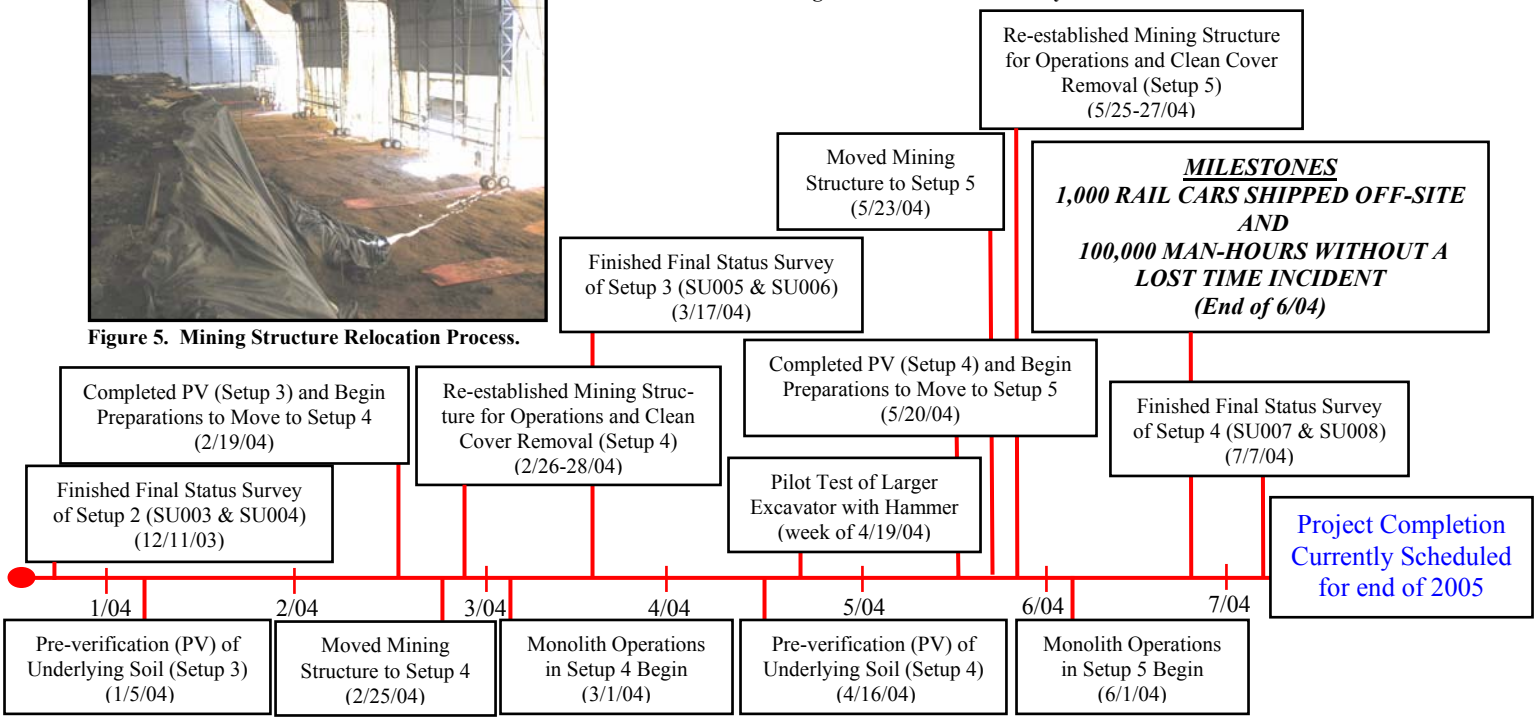
Re-tensioning of the fabric links made the Mining Structure ready for operations on May 27, 2004 (Setup 5).

With clean cover removal at Setup 5 on May 27, 2004, mining operations resumed on June 1, 2004.

FINAL STATUS SURVEY

Shaw completed the Final Status Survey for Setup 2 (Survey Units 3 and 4) on December 11, 2003 and for Setup 3 (Survey Units 5 and 6) on March 17, 2004 (see **Figure 6**). Furthermore, Shaw recently completed the Final Status Survey for Setup 4 (Survey Units 7 and 8) on July 7, 2004. The survey collected 21 samples in each of the survey units based on the triangular pattern in the MARSSIM analysis. Sample results were analyzed and compared to the 2000 ROD Amendment cleanup criteria. The sample data submitted to the Corps of Engineers resulted in approval on January 12, 2004 and February 27, 2004, to begin backfill of Survey Units 1 and 4, respectively. Clean cover material partially backfilled Survey Units 1 and 4. The State of Colorado also conducted independent verification on the six survey units.

Figure 6. Final Status Survey Area.



SAFETY MONITORING

As required by the site and community health and safety plans, perimeter and personnel monitoring operates at the site.

As of May 2004 (the most recent quality-checked data), the sitewide cumulative annual radiological dose is 0.06 millirems, which is substantially less than the regulatory limit of 10 millirems. Sitewide non-radiological metal measurements for lead, arsenic, and selenium continue to show levels that are much lower than national ambient air quality standards and superfund criteria levels. Molybdenum will be added to the non-radiological metal analyses for future monitoring.

Eight on-site high volume air samplers and pumps monitor air at the site perimeter continuously 24 hours a day, seven days a week. For comparison, an off-site background high volume air sampler and pump at the Englewood Golf Course also runs continuously. A background PM-10 dust monitor runs 24 hours a day, seven days a week, and work area PM-10 dust monitors operate during intrusive activities on-site (i.e. monolith mining and loadout).

Personnel monitoring during intrusive activities includes thermoluminescent dosimeters, radon dosimeters, and noise dosimeters, breathing zone sampling for site radionuclides, lead, arsenic, selenium, and silica, and real-time monitoring for ammonia, nitrogen dioxide, and carbon monoxide.

Vibration monitoring is also being conducted at the east site perimeter.

SITE SECURITY

The site has a security guard 24 hours a day, seven days a week. In addition, a security monitoring system operating at the site includes an electronic card reader system for check points around the site and a security camera along the Shattuck site railroad spur.

UPCOMING EVENTS – FALL 2004

Site operations including monolith mining and waste shipments will continue on schedule.

The Final Status Survey Reports for Survey Units 3, 5, 6, 7, and 8 will be submitted to the Corps of Engineeers for review and approval.

Underlying soil excavations and pre-verification sampling will be completed in mid-August 2004.

Relocation preparation activites and relocation of the Mining Structure to Setup 6 is schedued for the end of August 2004.

FOR SITE AND PROJECT INFORMATION

Visit the **EPA Shattuck web site:**

http://epa.region8/superfund/shtk/shattuck.html

Visit one of the **Information Repositories** listed on the back page.

FOR INFORMATION ABOUT SHATTUCK CITIZEN ADVISORY GROUP MEETINGS

Contact: Rob Henneke, EPA, (303) 312-6734.

FOR MORE INFORMATION

Contact an agency representative listed on the back page.

ABOUT THE SITE

The Shattuck site is about 6 acres of S.W. Shattuck Chemical Company property.

The original Record of Decision (ROD) was signed in January 1992. In it, EPA selected on-site stabilization and solidification in the form of a monolith as the remedy for the soils and natural attenuation for ground water.

EPA conducted a five-year review of the Shattuck site and found site-specific deficiencies in the monolith cover design, the structural and chemical integrity of the monolith, and the monolith's compliance program. Based on these findings, EPA could not be assured of the long-term protection of the original remedy.

On June 16, 2000, EPA selected off-site removal in a ROD Amendment because it best met Superfund's nine evaluation criteria. EPA will remove the contaminated soil and monolith to U.S. Ecology, a permitted facility in Grandview, Idaho.

Benefits of Off-site Disposal:

- Removes uncertainties concerning the long-term protection of human health and the environment;
- Allows for unrestricted land use upon remedy completion; eliminates reliance on land-use restrictions;
- Removes source material that could potentially contribute to future ground water contamination; and
- Disposes of material in a permitted facility, which will be most protective of human health and the environment.

Information Repositories

Documents related to the Shattuck site clean-up process are available for public review at the following locations:

EPA Superfund Records Center
South Tower, 3rd Floor (check-in)
999 18th Street
Denver, Colorado 80202
Monday-Friday 8:00-4:30
(303) 312-6473

Colorado Department of Public Health and Environment
Record Center, B Building, 2nd Floor
4300 Cherry Creek Drive South
Denver, Colorado 80246
Monday-Friday 8:00-5:00
(303) 692-3331

Decker Branch, Denver Public Library
1501 South Logan Street, Denver, Colorado 80210
Monday 10:00-8:00; Tuesday 12:00-8:00; Wednesday, Thursday, Saturday 10:00-5:30; Friday, Sunday closed
(303) 733-7584

For More Information Contact:

U.S. Environmental Protection Agency
999 18th Street, Suite 300
Denver, CO 80202-2466
Toll-free (800) 227-8917 x6734

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HMWMD-RP-B2
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